UNITED STATES DISTRICT COURT
DISTRICT OF CONNECTICUT

CLEARWATER SYSTEMS CORPORATION, Plaintiff, v. EVAPCO, INC., et al., Defendants.	CIVIL ACTION NO. 3:05cv507 (SRU)

CLAIM CONSTRUCTION RULING

Clearwater Systems Corporation ("Clearwater"), a manufacturer of non-chemical water treatment devices, has sued Evapco, a company that produces similar devices, as well as John Lane, a former Clearwater employee who left to work for Evapco, and Bullock, Logan and Associates ("Bullock Logan"), a company that has provided marketing services for both Clearwater and Evapco. Since 2005, the parties have engaged in litigation concerning alleged theft of trade secrets and other business law torts. Clearwater has also brought claims of patent infringement against Evapco and Bullock Logan, alleging that the defendants have infringed two Clearwater patents, one claiming a device for non-chemical water treatment (U.S. Patent No. 6,063,267, or the "'267 patent"), and the other claiming a method for non-chemical water treatment (U.S. Patent No. 6,641,739, or the "'739 patent").[1]

I assume the parties' familiarity with the facts and procedural history of this case. For discussion of certain underlying facts and history, including non-chemical water treatment generally and Clearwater and Evapco's devices specifically, *see* the July 26, 2005 Memorandum

[1] Throughout this order, I discuss Evapco and Bullock Logan collectively as "Evapco," except where indicated otherwise. Bullock Logan's alleged infringement is secondary to any infringement by Evapco, and Bullock Logan's liability is accordingly premised on Evapco's liability. Bullock Logan has adopted Evapco's arguments regarding claim construction.

of Decision regarding Clearwater's motion for a preliminary injunction (**doc. #98**).

Here, Clearwater and Evapco have submitted claim construction arguments concerning three terms: (1) "switch," as used in independent claims 1 and 21 of the '267 patent, (2) "connecting means" (or "means for connecting" or "connecting means for connecting"), as used in independent claims 1 and 21 of the '267 patent and claim 20 of that patent, which depends on claim 1, and (3) "ringing magnetic flux," as used throughout the '739 patent. Clearwater has generally argued against the need for claim construction, asserting that the claim language at issue has an ordinary meaning understood by a person of skill in the art. The parties have stipulated to a construction of "switch," which I adopt below. Because the "connecting means" terms utilize means-plus-function language, I must construe those terms in accordance with 35 U.S.C. § 112 ¶ 6. Likewise, "ringing magnetic flux," does not appear to have an ordinary meaning to those skilled in the art, and I construe that term below.

I. Claim Construction

As a general matter, the claims of a patent define the invention that a patentee is granted the right to exclude others from making or using, with the specification in a patent serving as a basic presentation teaching that invention. *See, e.g., Innova/Pure Water Inc. v. Safari Water Filtration Systems, Inc.*, 381 F.3d 1111 (Fed. Cir. 2004); *Oak Technology Inc. v. International Trade Commission*, 248 F.3d 1316 (Fed. Cir. 2001). Courts construe claims in order to resolve ambiguities and to assign meaning to claims so that a patentee's right to exclude is clearly defined. *Liquid Dynamics Corp. v. Vaughan Co.*, 355 F.3d 1361 (Fed. Cir. 2004). Because the claims define an invention, limitations should not be read from the specification into those claims, but a claim should be read in light of the specification. *Comark Communications, Inc. v.*

Harris Corp., 156 F.3d 1182, 1186-87 (Fed. Cir. 1998). This can be difficult, because "the distinction between using the specification to interpret the meaning of a claim and importing limitations from the specification into the claim can be a difficult one to apply in practice." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005).

In *Phillips*, the Federal Circuit discussed, clarified, and re-affirmed principles of claim construction, providing courts with direction in the manner in which claims should be construed. First, the claims themselves provide substantial guidance about the meaning of particular claim terms. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). "[T]he context in which a term is used in the asserted claim can be highly instructive. . . . [T]he use of a term within the claim provides a firm basis for construing the term." *Phillips*, 415 F.3d at 1314. The use of a term in one claim can help demonstrate the meaning of that term in another claim, and differences among claims can also guide understanding. *See Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1342 (Fed. Cir. 2001); *Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1538 (Fed. Cir. 1991). Notably, when a dependent claim adds a limitation that is not present in the claim on which it depends, the independent claim is presumed to be free of that limitation. *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 910 (Fed. Cir. 2004).

Because claims are part of the patent as a whole, "claims must be read in view of the specification, of which they are a part." *Phillips*, 415 F.3d at 1315 (internal quotation marks omitted) (citing *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979-81 (Fed. Cir. 1995) (en banc), *aff'd,* 517 U.S. 370 (1996)). That specification is "highly relevant to the claim construction analysis . . . [and is] the single best guide to the meaning of a disputed term." *Vitronics*, 90 F.3d at 1582. The scope and construction of claims, then, is determined by "giving

claims their broadest reasonable construction in light of the specification as it would be interpreted by one of ordinary skill in the art." *Phillips*, 415 F.3d at 1316 (internal quotation marks and citation omitted). In other words, the specification may indicate certain outer limits of a claim's scope, but that claim may be broader than the embodiments identified and discussed in a patent's specification.

Here, as discussed below, the specifications in the '267 patent and the '739 patent are instructive with regard to the meaning and proper construction of the claim terms at issue. Accordingly, I have limited my discussion to the claims and their specifications, and do not now consult the patents' prosecution histories or any extrinsic sources, such as dictionaries or trade publications.

II. Construction of the Claim Terms at Issue

A. "Switch"

The parties have stipulated to a construction of switch, and I adopt that stipulation. Accordingly, in claims 1 and 21 of the '267 patent, "switch" is construed as:

> An electrical component that includes a control terminal and at least two additional terminals that pass current through the component. Current is either permitted to flow or prevented from flowing through the additional terminals when different voltage levels are applied to the control terminal.

B. "Connecting Means"

The initial question to consider regarding construction of the term "connecting means" is whether that term is written in "means-plus-function" language that would implicate 35 U.S.C. § 112 ¶ 6. That section directs that means-plus-function claims are to be construed to cover both the disclosed structure for performing the function and equivalents thereof. In other words, if a

patent claims the means for performing a certain function, and the claim language does not identify a structure that performs that function, the patent grants protection regarding the means for performing that function only through the enabling structures disclosed in the specification, and equivalents thereof.

Clearwater argues that the terms "connecting means," "connecting means for connecting," and "means for connecting" do not need construction, and are not written in "means-plus-function" language that would implicate section 112 ¶ 6. Instead, Clearwater contends that "connecting means" is simply another term for the word "structure." According to Clearwater, when the '267 patent claims "connecting means for connecting said coil, capacitance and first switching circuit to one another," '267 Patent at Claim 1, col. 7, ln. 4-5, "connecting means for connecting said coils, given capacitance and switch to one another and to said power source," *id.* at Claim 21, col. 10, ln. 1-2, it actually claims a "structure connecting said coil(s) . . . ." Clearwater argues that the term "connecting means" (and the variants thereof that appear in the '267 patent) is not a means-plus-function term, and was used instead to describe varying structures connecting certain electrical components.

The main flaw with Clearwater's argument is that under section 112 ¶ 6, as well as Federal Circuit case law, use of the word "means" or the term "means for" triggers a presumption of means-plus-function language that can only be overcome if the claim itself identifies a structure associated with the claimed function. Section 112 ¶ 6 states:

> An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The Federal Circuit has addressed and applied section 112 ¶ 6 in a number of cases, indicating that claims using the word "means" are presumably means-plus-function claims. *See, e.g.*, *Cardiac Pacemakers, Inc. v. St. Jude Medical, Inc.*, 296 F.3d 1106, 1113 ("Use of the term 'means' generally invokes § 112, ¶ 6 ") (Fed. Cir. 2002); *Lockheed Martin Corp. v. Space Systems/Lorel, Inc.*, 249 F. 3d 1314, 1324 (Fed. Cir. 2001) (same); *Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1584 (Fed. Cir. 1996) (same).

The Federal Circuit has on several occasions construed (or endorsed construction of) the term "means for connecting" as means-plus-function language, with the corresponding function being connecting the items identified in the pertinent claim. *See, e.g., Searfoss v. Pioneer Consolidated Corp.*, 374 F.3d 1142 (Fed. Cir. 2004) (affirming district court construction of "actuation means for connecting said tension bail to said extension assembly and applying a downward force through said tension bail center section to said cover" as means-plus-function limitation with claimed functions of connecting the tension bail and extension assembly, and applying a downward force through the tension bail to the cover); *Medtronic, Inc. v. Advanced Cardiovascular Systems, Inc.*, 248 F.3d 1303, 1311-12 (Fed. Cir. 2001) (construing "means for connecting adjacent elements together" as means-plus-function language with windings, disclosed in the specification, as corresponding structure). Indeed, the Supreme Court of the United States and lower courts have offered the term "means of connecting" as an example of means-plus-function language. *Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 27 (1997), *quoted in Contempo Tobacco Products, Inc. v. McKinnie*, 45 U.S.P.Q.2d 1969, 1974 (C.D. Ill. 1997).

Here, the '267 patent claims a means for connecting various structural elements of the

patented apparatus. Those elements vary slightly between claims, but each claim at issue claims a connecting means for connecting a coil or coils, capacitance, and a switch or one or more switching circuits. The claimed function in each claim, then, is connecting those elements to each other and to a power source.

When a claim presumptively invokes section 112 ¶ 6, that presumption can be overcome by a recitation – in the language of the claim at issue – of structure that performs the claimed function. "In determining whether to apply the statutory procedures of [section 112 ¶ 6], the use of the word 'means' triggers a presumption that the inventor used this term advisedly to invoke the statutory mandates for means-plus-function clauses," *New York Products, Inc. v. Central Tractor*, 99 F.3d 1568, 1574 (Fed. Cir. 1996), and "[i]n deciding whether [that] presumption has been rebutted, the focus remains on whether the claim as properly construed recites sufficiently definite structure to avoid the ambit of § 112 ¶ 6," *Personalized Media Communications, LLC v. International Trade Commission*, 161 F.3d 696, 704 (Fed. Cir. 1998). "[W]here a claim recites a function, but then goes on to elaborate sufficient structure, material, or acts within the claim itself to perform entirely the recited function, the claim is not in means-plus-function format." *Sage Products, Inc. v. Devon Industries, Inc.*, 126 F.3d 1420, 1427-28 (Fed. Cir. 1997). Here, neither claim 1 of the '267 patent, claim 20 of that patent (which depends on claim 1), nor claim 21 of that patent recite sufficient structure to avoid application of section 112 ¶ 6. Although those claims do recite certain structural elements, the "connecting means" or "connecting means for connecting" perform the function of connecting those structures; those structures do not themselves perform the claimed functions. The claims claim means for connecting coil(s), capacitance and switching circuit(s), but do not recite wires or other structural elements that

actually connect those components.

Clearwater argues that the doctrine of "claim differentiation" provides a basis for overcoming the presumption that section 112 ¶ 6 applies. Without discussing that doctrine at length, it is worth noting that the Federal Circuit has held that the doctrine of claim differentiation cannot override section 112 ¶ 6. *Laitram*, 939 F.2d at 1538. Because the '267 patent includes a means-plus-function limitation when it claims "connecting means," the doctrine of claim differentiation does not apply. However, because of the presumption that an independent claim does not have a limitation that is introduced for the first time in a dependent claim, *Wenger Manufacturing Inc. v. Coating Machinery Systems Inc.*, 239 F.3d 1225, 1233 (Fed. Cir. 2001), dependent claims are presumed to be narrower in scope than the independent claims on which they depend. Therefore, in light of the requirement that I construe claims as broadly as possible in light of the limitations in the specification, I will not read into my construction of "connecting means" any limitation present with regard to dependent claim 20 (or any other dependent claim) that is not present with regard to claim 1, on which claim 20 depends.

Accordingly, for the reasons set forth above, I conclude that the "connecting means" claims are means-plus-function claims.

Construction of a means-plus-function limitation involves two steps: first, identifying the claimed function (including limitations contained in the claim language), and second, determining what structure (if any) disclosed in the specification corresponds to the claimed function. *Cardiac Pacemakers*, 296 F.3d at 1113. Here, the claimed function is connecting the structural elements in the claims at issue. In particular, claim 1 of the '267 patent claims "connecting means for connecting said coil, capacitance and first switching circuit to one another

and to said power source;" claim 20, which depends on claim 1, claims "said connecting means being one for connecting said coil, capacitance, and first and second switching circuits to one another and to said power source," and claim 21 claims "connecting means for connecting said coils, given capacitance and switch to one another and to said power source."

Although the '267 patent, as a whole, discloses an apparatus for providing non-chemical water treatment, the claims that include the "connecting means" language in question here effectively claim circuits, with the "connecting means" or "means for connecting" being the circuitry. The corresponding structures in the specifications are those disclosed structures (and their equivalents) that enable the circuit components to be connected – to each other and to a power source – nothing more and nothing less.

The specification of the '267 discloses a number of structures that comprise the circuitry described in the claims. Because claim 1 and claim 21 both include a power source as a component to be connected by the connecting means, the power source identified in the specification should not be construed as a part of those connecting means. In addition, because claim 21 claims a connecting means for connecting various components including a switch, proper construction will include those structures disclosed in the specification that connect up to that switch and may elsewhere be described as a "switching circuit." Because claim 1 claims a connecting means for connecting various components including a switching circuit, it is those structures the specification identifies that connect up to that switching circuit, as well as those that comprise the switching circuit, that are claimed. Those structures – the structures identified as necessary for connecting coil(s), capacitance, a switch or switching circuit, and a power source, in a manner that allows the circuit to function as indicated in claims 1 and 21 – are:

Structure	Source
conductors	col. 4, ln. 12
comparator subcircuit	col. 4, ln. 40
timer subcircuit	col. 4, ln. 41
indicator subcircuit	col. 4, ln. 41

Because claim 21 claims connecting means for connecting various components, including a switch, "connecting means" should be construed as including those parts of the switching circuit that connect the switch to the rest of the apparatus.

Evapco argues that "connecting means" also includes a thermal overload switch, because the specification of the '267 patent identifies a thermal overload switch as part of a diagram demonstrating the preferred embodiment of the invention. '267 Patent, col. 4, ln. 14-15. There is no indication in the patent specification, however, that the thermal overload switch functions to connect the identified components as do the various conductors and subcircuits identified above. Instead, it appears that the thermal overload switch is included in the preferred embodiment of the invention claimed in the '267 patent, and in that embodiment is part of the connecting means, rather than necessarily always being part of the connecting means. Accordingly, "connecting means" should not be construed to include a thermal overload switch.

For the reasons discussed above, "connecting means" is construed to mean: means for connecting one or more coils, capacitance, a switch, and a power source to each other, including conductors, a comparator subcircuit, an indicator subcircuit, and a timer subcircuit.

C. "Ringing Magnetic Flux"

The '267 patent claims an *apparatus* that is used to provide non-chemical water

treatment, and the '739 patent claims a *method* for non-chemical water treatment. The specification of the '739 patent indicates that the apparatus claimed in the '267 patent is a preferred embodiment for conducting the method claimed in the '739 patent. '739 patent at col. 4, ln. 63-64.

Each of the three independent claims in the '739 patent – claims 1, 10, and 16 – claim a method comprising provision, generation, or production of "ringing magnetic flux." '739 Patent at claim 1, col. 8, ln. 59-60; claim 10, col. 9, ln. 40; claim 16, col. 10, ln. 37. Clearwater contends that "ringing magnetic flux" is a customary and ordinary term known to those of ordinary skill in the art, and that, accordingly, construction of that term is not necessary. To support that contention, Clearwater argues that, because the United States Patent and Trademark Office ("PTO") accepted and issued as valid the method claims of the '739 patent without requiring limitations to a specific preferred embodiment of an apparatus from another patent (in this case, the '267 patent), and the inventors of the '739 patent did not assign "ringing magnetic flux" any special definition, limitations of the '267 patent should not be read into the '739 patent, and "ringing magnetic flux" needs no construction.

Clearwater is correct that limitations of the '267 patent should not be read into the '739 patent. Claims may embrace "different subject matter than is illustrated in the specific embodiments in the specification," *Liebel-Flarsheim*, 358 F.3d at 906-08, and the Federal Circuit has "expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment." *Phillips*, 415 F.3d at 1323 (citing *Gemstar-TV Guide International, Inc. v. International Trade Commission*, 383 F.3d 1352, 1366 (Fed. Cir. 2004)). As the *Phillips* Court recognized,

> [o]ne of the best ways to teach a person of ordinary skill in the art how to make and use the invention is to provide an example of how to practice the invention in a particular case. Much of the time, upon reading the specification in that context, it will become clear whether the patentee is setting out specific examples of the invention to accomplish those goals, or whether the patentee instead intends for the claims and the embodiments in the specification to be strictly coextensive.

415 F.3d at 1323 (citing *SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc.*, 242 F.3d 1337, 1341 (Fed. Cir. 2001)). The '739 patent expressly indicates that the apparatus claimed in the '267 patent is the preferred embodiment, but not the only embodiment, for performing the methods claimed. The specification of the '739 patent discusses a number of aspects to which the claimed invention is directed, '739 Patent at col. 3, ln. 36, 48, indicating for instance that "[t]he means for producing the ringing magnetic flux *may* comprise" an apparatus that performs certain functions. *Id.* at col. 3, ln. 62- col. 4, ln. 5 (emphasis added).

Further, the '739 patent's description of preferred embodiment(s) states that "[t]he ringing magnetic flux *may* be provided by an apparatus such as that of U.S. Pat. No. 6,063,267," *id.* at col. 4, ln. 63-64 (emphasis added), and that "*[t]he invention is not necessarily limited* to use of the apparatus of [the '267 patent] for the production of the required successive bursts or periods of ringing magnetic flux. *Other methods can be used* for such a purpose." *Id*. at col. 5, ln. 25-29 (emphasis added). Accordingly, the '739 patent should not be limited to its preferred embodiment, and that "ringing magnetic flux" should not necessarily be limited by limitations contained in the '267 patent.

Clearwater is not correct, however, when it argues that the term "ringing magnetic flux" as used in the '739 patent needs no construction because the PTO issued the '739 patent without requiring the limitations of the '267 patent. Courts regularly issue claim construction orders

precisely because claims issued by the PTO still contain claims or terms that are ambiguous and unclear to one of ordinary skill in the art. The only support Clearwater provides for its contention that "ringing magnetic flux" is known to those of skill in the art is testimony from the deposition of Thomas Bugler, an Evapco vice president. In that deposition, counsel for Clearwater asked Bugler his understanding of the phrase "electromagnetic flux," rather than "ringing magnetic flux." Bugler Dep. at p. 100, ln. 20 - p. 101, ln. 12; p. 124, ln. 17 - p. 125, ln. 4. Without any support for Clearwater's contention that "ringing magnetic flux" has an ordinary meaning to one skilled in the art, and without any clear indication of the meaning of that term in the claims reciting that term, I look to the specification of the '739 patent, which incorporates by reference the '267 patent.

Evapco has proposed construing "ringing magnetic flux" to mean "the magnetic field that results from interrupting the supply voltage from an alternating current source to an induction coil one quarter cycle into the supply voltage sine wave." Evapco Initial Claim Construction Br. at 16. That construction is based on specification language from the '739 patent stating that

> [i]n the apparatus of [the '267 patent], the circuit for producing successive bursts of ringing magnetic flux includes an inductor arrangement . . . . This inductor arrangement is connected to a 60 Hz electrical power source, at a voltage of about 5V to 50 V (rms), through a switch in parallel with a small capacitance. At the beginning of each power supply cycle, the switch closes for about a quarter cycle so that current builds up in the inductor arrangement. When the switch is then suddenly opened, the supply current to the inductor arrangement is interrupted, causing the inductor arrangement to act in series with the capacitance to form a series resonant circuit with the supply voltage source, causing a decaying burst of ringing current to appear in the inductor arrangement, which ringing current has associated with it a corresponding ringing magnetic flux applied to the water in the pipe surrounded by the inductor.

'739 patent at col. 5, ln. 8-25. The '739 patent specification also states:

> As another means of generating the ringing flux, an inductor arrangement . . . may be

> connected to an electrical power supply source . . . by way of a switch in series with the inductor arrangement and the power supply output terminals. An associated controller for the switch then alternately opens and closes the switch . . . to provide periods or bursts of ringing current in the inductor arrangement and corresponding periods or bursts of ringing magnetic flux in the water.

Id. at col. 5, ln. 37-47. The two identified means of generating "ringing magnetic flux" guide construction of the term. In the first description, ringing magnetic flux occurs when a switch is closed for about a quarter cycle and then opened, causing a decaying burst of ringing current and a corresponding ringing magnetic flux. In the second description, ringing magnetic flux occurs when a switch is opened and closed at a given rate to provide bursts of ringing current and corresponding bursts of ringing magnetic flux.

In light of the specification language, Evapco's proposed definition is for the most part appropriate. According to the '739 patent specification, "ringing magnetic flux" is the decaying magnetic field that results from interrupting the supply voltage from an alternating current source to an induction coil. Because the law of claim construction instructs me to construe terms in light of the specification, but no narrower than is necessary, and because the specification of the '739 patent makes clear that the '267 patent only constitutes a preferred embodiment, and that a ringing magnetic flux may be generated when a switch is opened and closed at various intervals, "ringing magnetic flux" should not be constructed to require that the switch be opened after one-quarter cycle.

Accordingly, as used in the '739 patent, "ringing magnetic flux" is construed to mean: the decaying magnetic field that results from interrupting the supply voltage from an alternating current source to an induction coil.

III. Conclusion

For the reasons discussed above, the terms at issue in this litigation are construed as follows:

Switch:	An electrical component that includes a control terminal and at least two additional terminals that pass current through the component. Current is either permitted to flow or prevented from flowing through the additional terminals when different voltage levels are applied to the control terminal.
Connecting Means:	Means for connecting one or more coils, capacitance, a switch, and a power source to each other, including conductors, a comparator subcircuit, an indicator subcircuit, and a timer subcircuit.
Ringing Magnetic Flux:	The decaying magnetic field that results from interrupting the supply voltage from an alternating current source to an induction coil.

It is so ordered.

Dated at Bridgeport, Connecticut, this 16th day of May 2008.

/s/ Stefan R. Underhill
Stefan R. Underhill
United States District Judge